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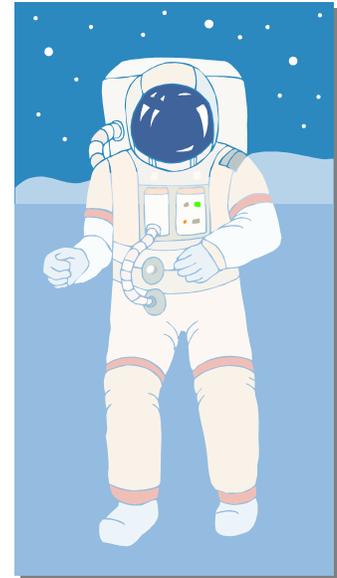
# SPACE EXPLORATION IN THE NEW MILLENNIUM

ALLEGRO PRODUCTIONS

2000

Grade Levels: 5-9

26 minutes



## DESCRIPTION

Explores space stations, lunar bases, and Mars landings as possible solutions to earth's environmental and overpopulation problems. Questions cover both positive and negative aspects of this ambitious, speculative future.

## ACADEMIC STANDARDS

### Subject Area: Technology

- Standard: Understands the relationships among science, technology, society, and the individual
  - Benchmark: Knows that technology and science have a reciprocal relationship (e.g., technology drives science, as it provides the means to access outer space and remote locations, collect and treat samples, collect, measure, store, and compute data, and communicate information; science drives technology, as it provides principles for better instrumentation and techniques, and the means to address questions that demand more sophisticated instruments)

### Subject Area: Science

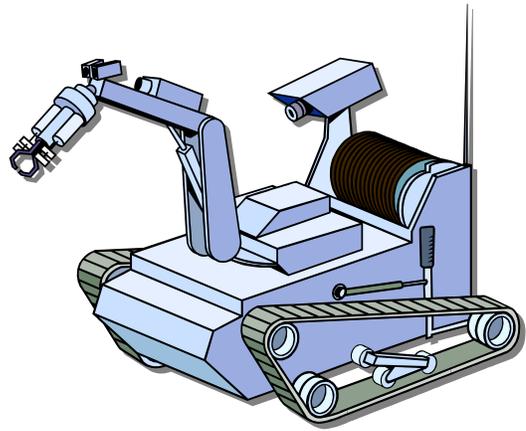
- Standard: Understands the composition and structure of the universe and the Earth's place in it
  - Benchmark: Knows that the planet Earth and our Solar System appear to be somewhat unique (e.g., the Earth is the only celestial body known to support life), although similar systems might yet be discovered in the universe

## INSTRUCTIONAL GOALS

1. To introduce the space program and some of its goals.
2. To illustrate plans that will include missions to Mars.
3. To dramatize the process of terraforming the planet Mars.
4. To examine the asteroid belt in its nearly limitless supply of raw materials to fund our expansion toward the moons, where our future may unfold.
5. To realize that the surface and surrounding space of the planet Mars have characteristics that challenge existing technologies to create such a means of transportation.

## BACKGROUND INFORMATION

The next century will probably bring more of the same social problems we're now facing. Overcrowding and pollution may increase. However, dramatic solutions are being proposed and worked out that may change life here on earth forever as we venture beyond the atmosphere of our planet into space. The moon, Mars, and the asteroids are within our reach; and within the next 20 years, we will have taken steps on a path that will ultimately reach the stars.



This video takes an in-depth look at the space program and some of its goals. First steps in the form of faster, lighter rockets that will reduce costs by a factor of 10 have already been taken. The International Space Station is well on its way to being completed. From there, we'll travel to the moon.

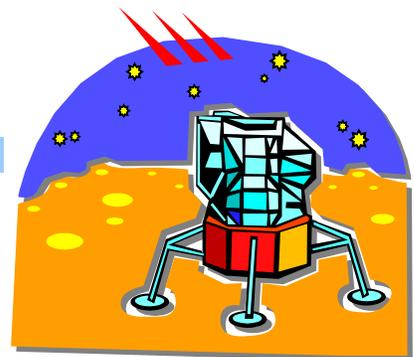
## VOCABULARY

1. analyzed
2. compound
3. deployed
4. fusion
5. greenhouse gases
6. hostile
7. inefficient
8. insulation
9. lunar
10. meteorites
11. orbit
12. photosynthesis
13. population
14. radiation
15. realign
16. reclaiming
17. resources
18. strains
19. terraforming
20. velocity

## AFTER SHOWING

### Discussion Items and Questions

1. What are we doing about the increasing population?
2. If you were a scientist, what problem would you be working on, chiefly?
3. What are some problems on earth the video did not mention?
4. How will going into space help us here on earth?
5. Have students compare the earth to a spaceship.
6. Discuss how the future is created by the actions of today, and ask students to suggest methods that might influence the outcome.



### Applications and Activities

1. Have students research plans for colonizing Mars and report their findings.
2. Assign an essay in which students describe the future as they imagine it to be.

## RELATED RESOURCES



### Captioned Media Program

- Martian Mission #9294
- Rocketships #9380



### World Wide Web

The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and "kid safe" sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- **SPACE-AGE LIVING**

<http://school.discovery.com/schooladventures/spacestation/index.html>

Watch how all the pieces come together to build the International Space Station. Find answers to "What is it?" "Why is it being built?" "When will it be complete?" and many more.

- **LIFTOFF TO SPACE EXPLORATION**

<http://liftoff.msfc.nasa.gov/>

The Human Journey portrays what it would be like living in space; find out how the Station will get its power for living in space; and click on other buttons to read more about space exploration.

- **NASA**

<http://www.nasa.gov/>

The home page of the National Aeronautics and Space Administration—NASA—click on "Human Exploration and Development of Space," "Aerospace Technology," and other topics that pertain to space exploration and current activities of this organization.

- **NASA KIDS**

<http://kids.msfc.nasa.gov/>

Click on the graphic of the two domes and be transported to "Astronauts, Living in Space," where you can choose a variety of topics such as "Space Wardrobe," "Living in Space," "Today's Scientists," "Space Walking," and more!

- **THE MARS MILLENNIUM PROJECT**

<http://www.mars2030.net/>

Available in Spanish as well, this site provides numerous resources. These include "Astrobiology," "Basics of Space Flight," "NASA Human Spaceflight," "Exploring the Moon and Mars: Choices for the Nation," and more. Become a weather reporter for the Martian Sun-Times newspaper!

